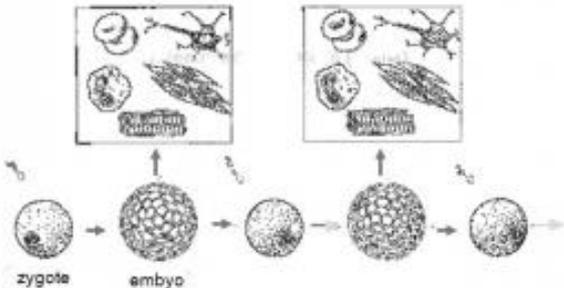


Aula 3. A linhagem germinativa

August Weismann -1887

Weismann's germline concept 1892

Das Keimplasma: eine Theorie der Vererbung.
The germ plasm: a theory of heredity 1892



The diagram illustrates the germline concept. At the bottom, a sequence of cells shows the development from a zygote to an embryo. From the embryo, two distinct cell lines emerge: one leading to somatic cells (represented by a fly and a leaf) and another leading to germ cells (represented by a fly and a leaf). The somatic cells are labeled 'SOMATIC CELLS' and the germ cells are labeled 'GERM CELLS'. The text below the diagram states: '•soma cell lines are separate from germline from the onset of ontogeny' and '•only germline cells keep totipotency'.

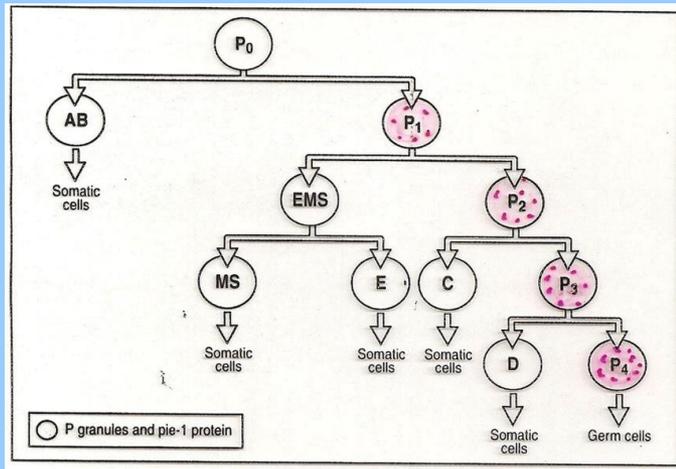
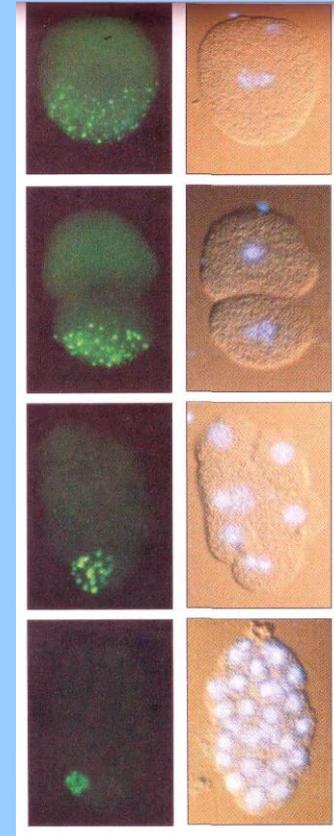
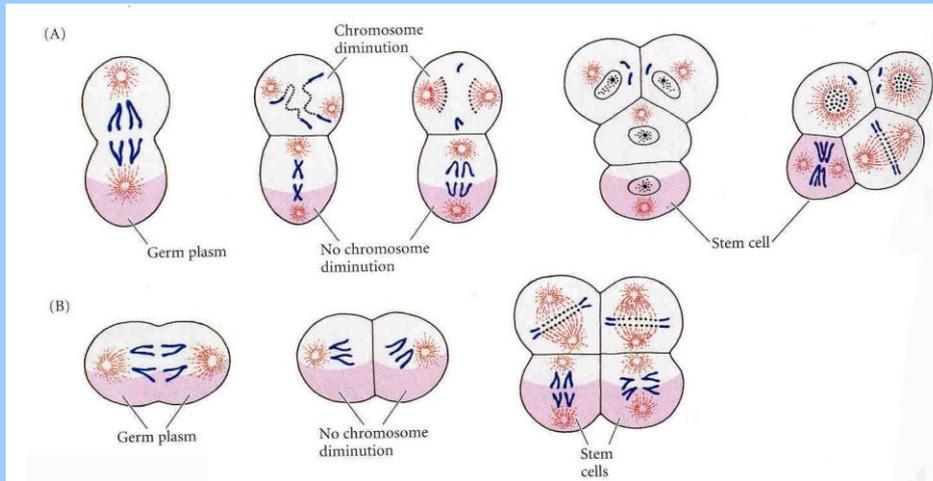


August Weismann
1834-1914

myscienceschool.org

- Separação entre soma e linhagem germinativa.
- Alterações no soma não passariam para os gametas:
- Contrário à teoria das “características adquiridas” (Lamarck)

Linhagem germinativa em *Parascaris*



PAR-3, PAR-1 → formação das CP
vasa e nanos → localização e função

ESTÁGIOS INICIAIS DA EMBRIOGÊNESE DE INSETOS (Diptera)

Drosophila



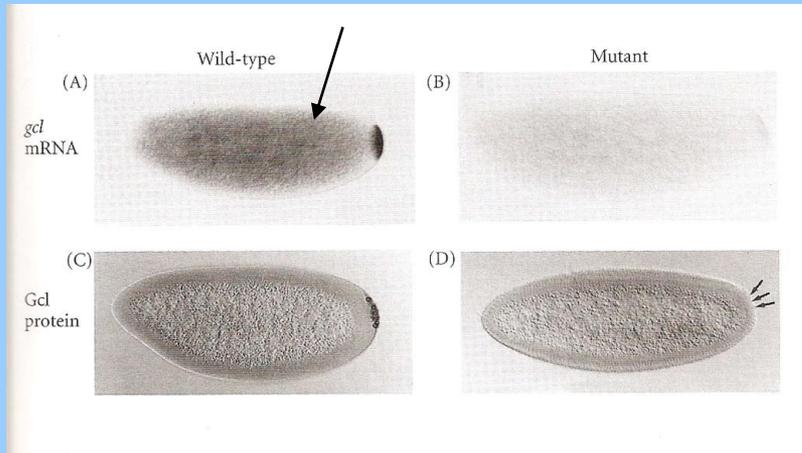
CGP

(Gilbert, 3ª. Ed)

Linhagem germinativa em *Drosophila*

grand child less (gcl)

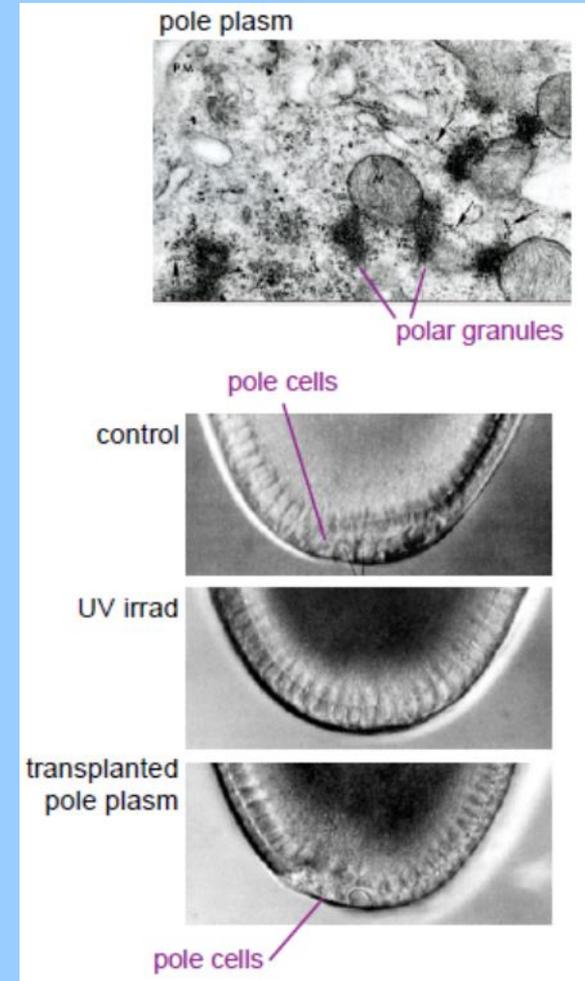
Embrião



gcl → formação das CGP

oskar → posição das CGP

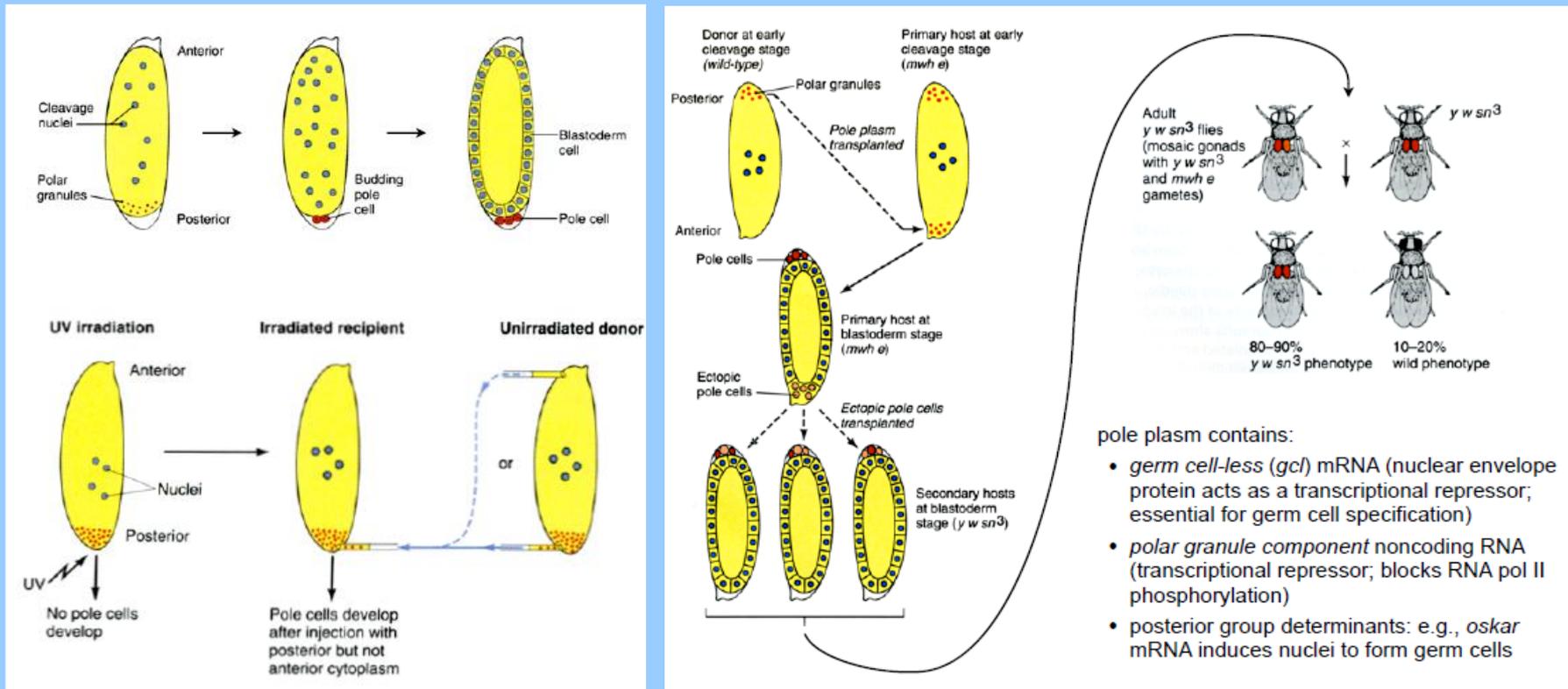
vasa, *nanos*
RNA não traduzido
rDNA mitocondrial



Geigy R (1931) Rev Suisse Zool 38: 187-228.

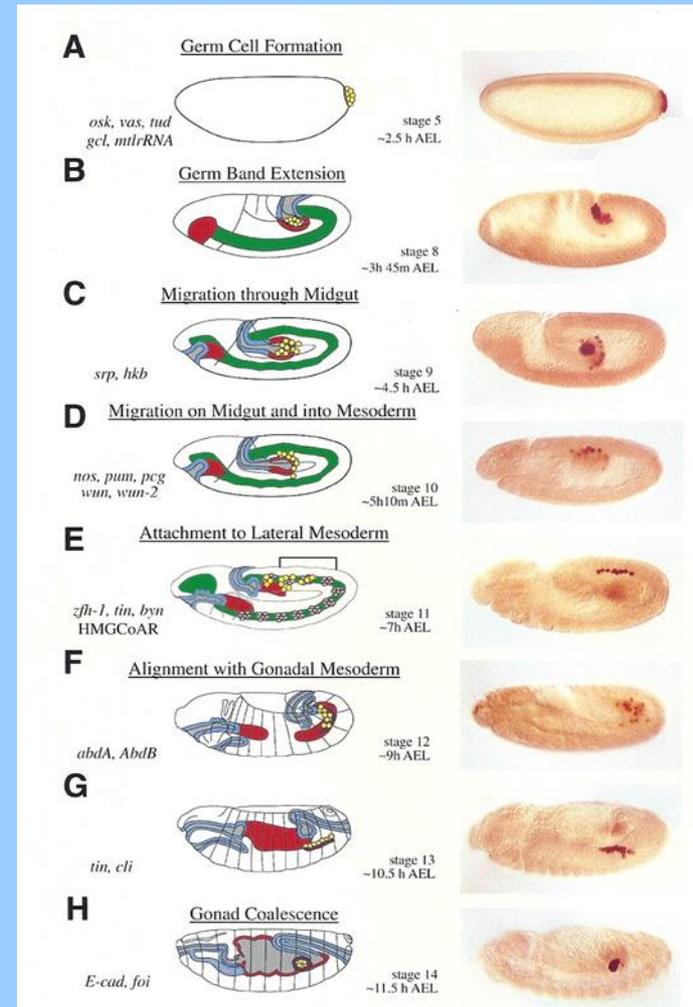
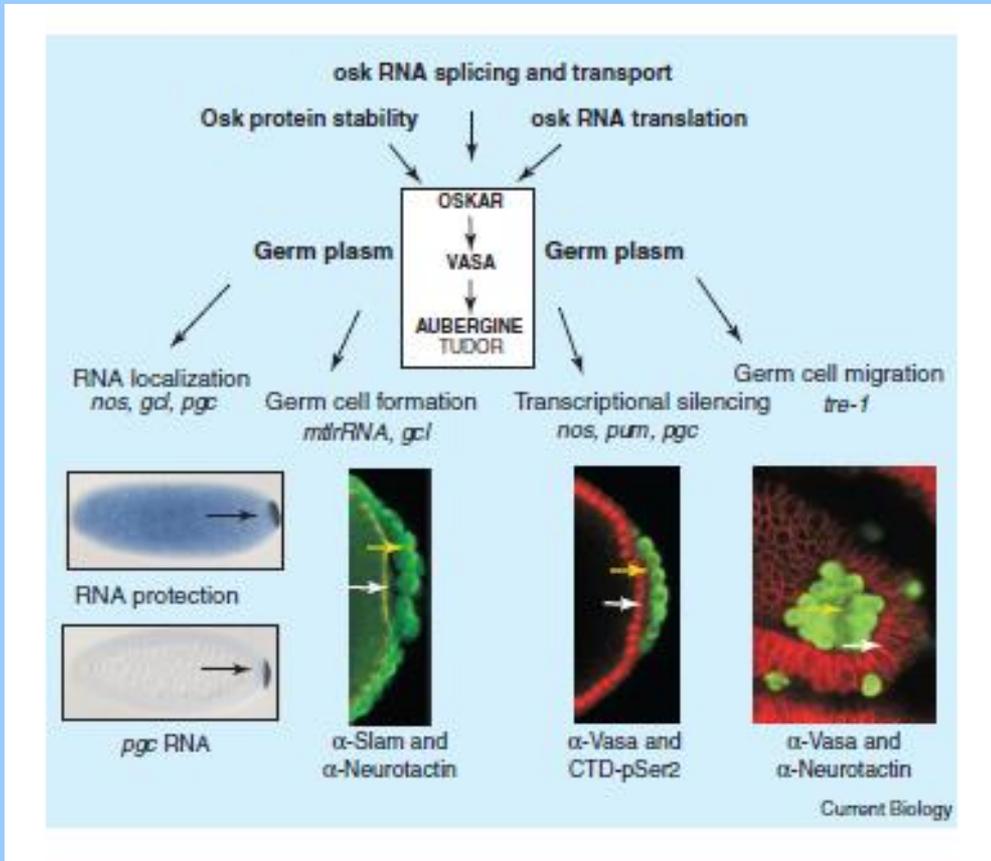
- Não formação de células germinativas em embriões de *Drosophila* após irradiação do polo posterior com UV

Experimentos com transplante de citoplasma e CGP



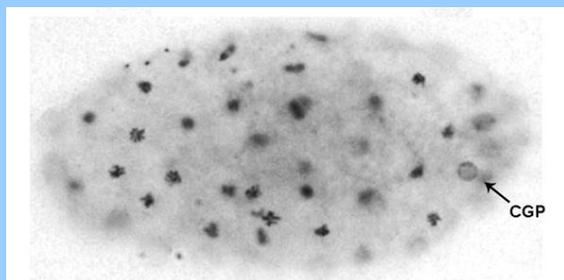
Illmensee & Mahowald (1974) Proc Natl Acad Sci USA. 71: 1016–1020.

Migração das CGP

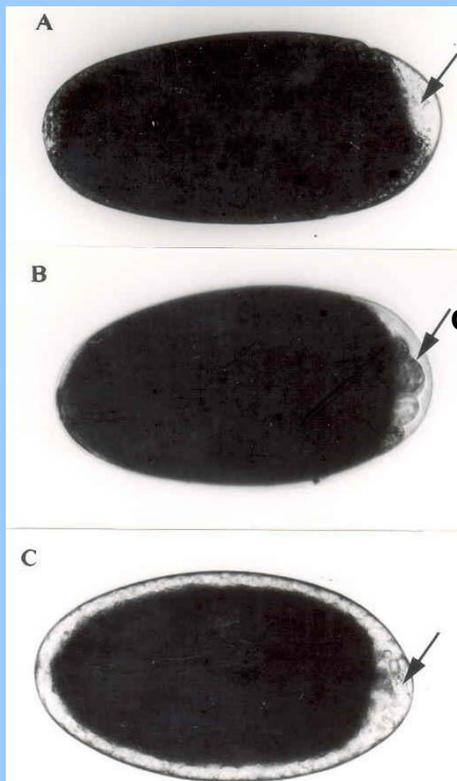


Santos & Lehmann (2004) Current Biol 14: 578-594

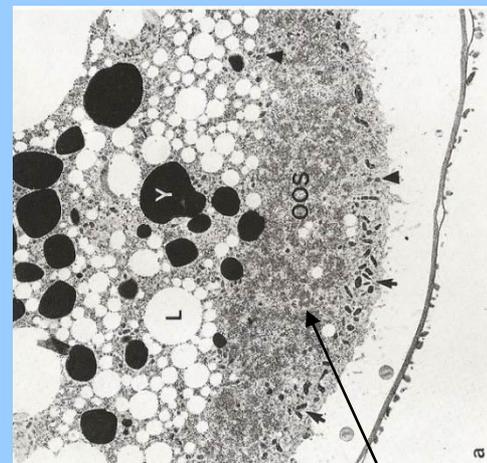
Linhagem germinativa de *Sciara*



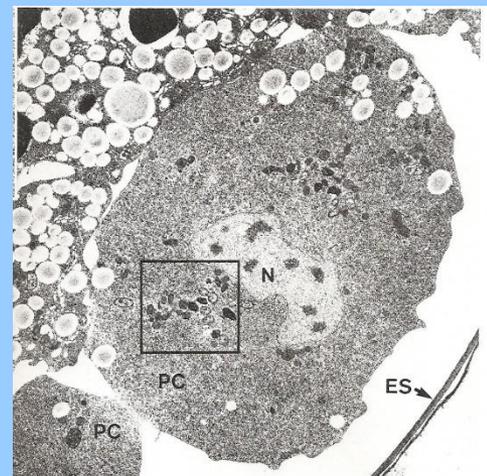
Embrião
(Núcleos corados)



Embriões
(Luz transmitida)



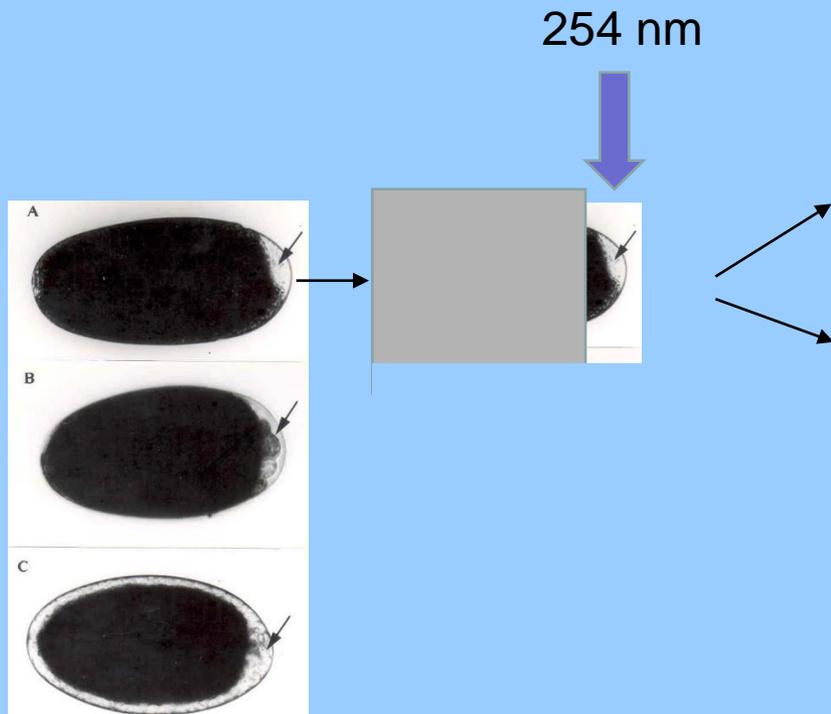
oossomo



Célula germinativa primordial (MET)

Efeitos da radiação UV germicida

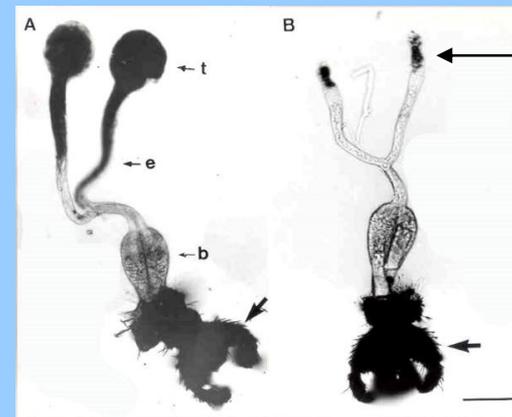
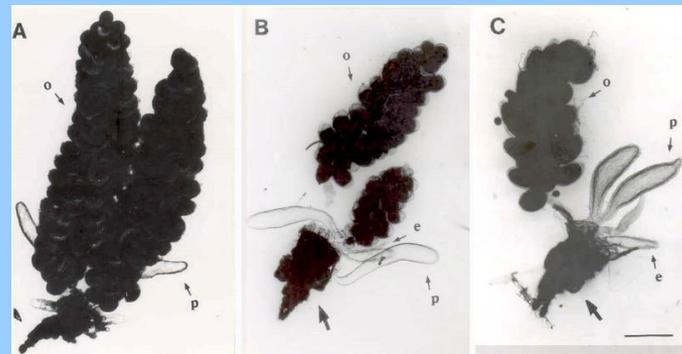
Formação da linhagem germinativa em *Sciara*



Irradiação antes da formação das CGP

Ovários fêmeas adultas

normal Oossomos irradiados

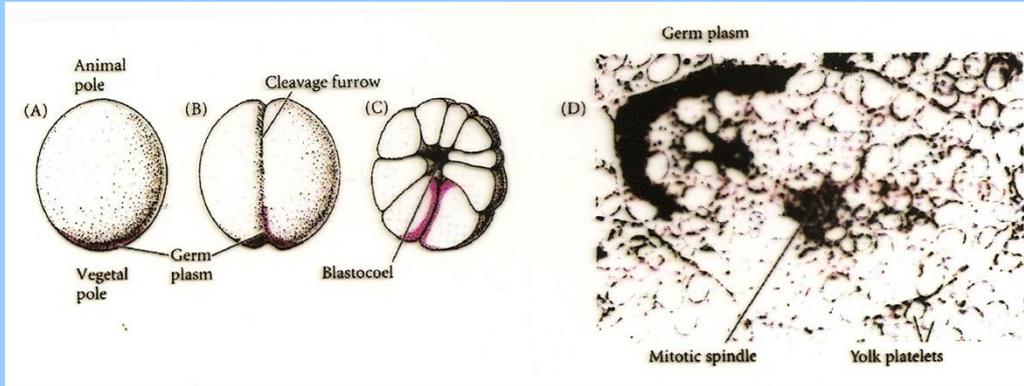


normal Oossomo irradiado

Ausência de testículos

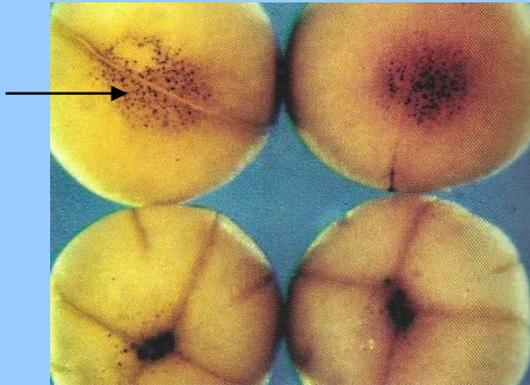
Machos adultos

Anfíbios



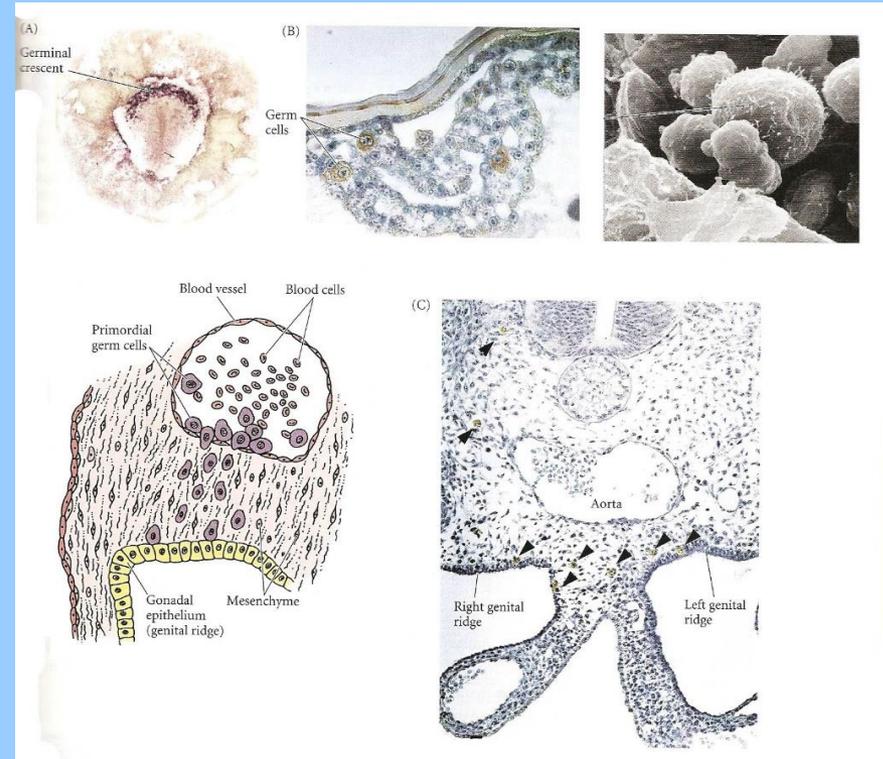
Aves

Xcat2



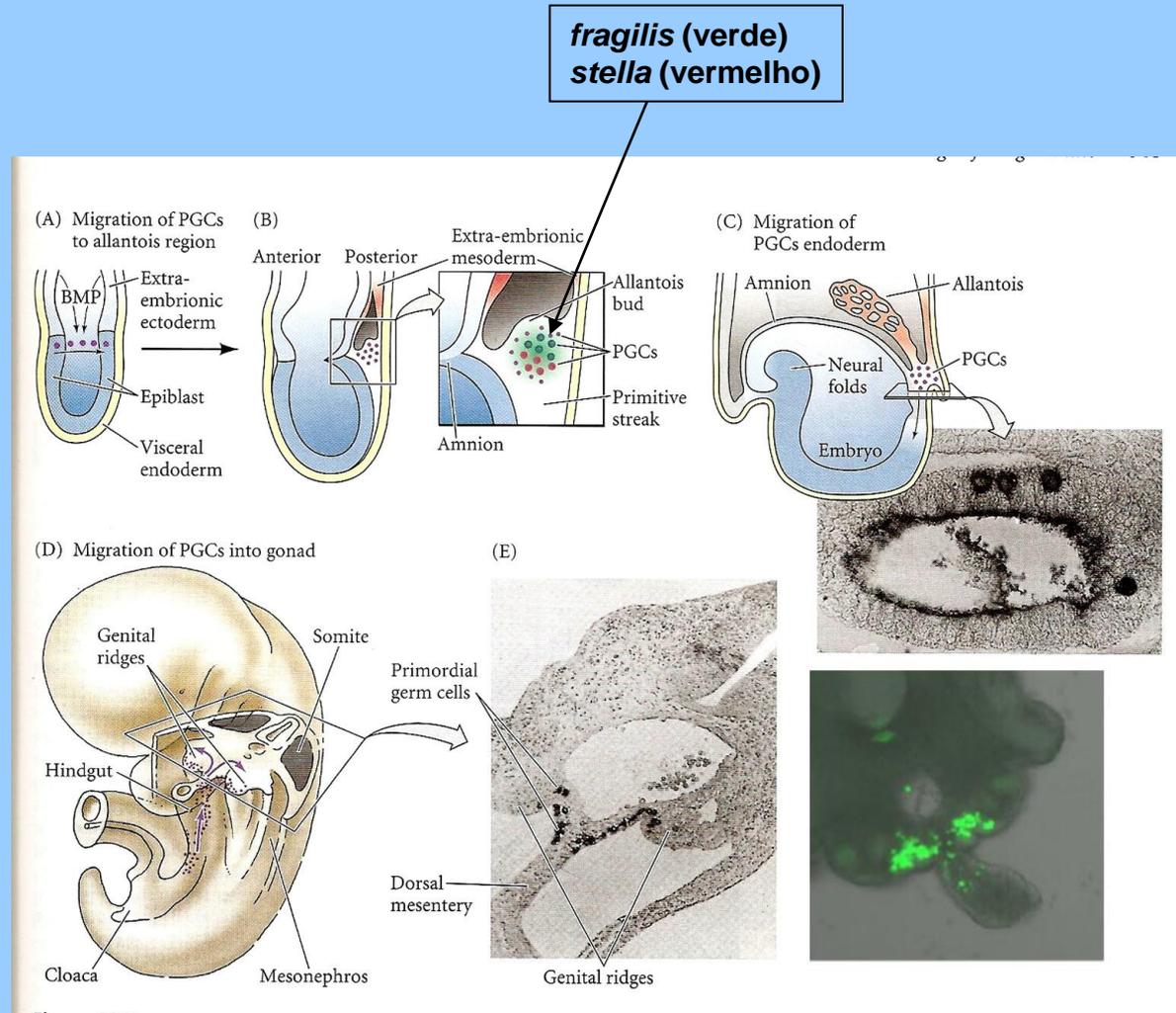
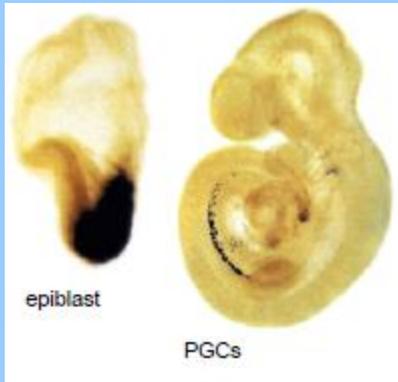
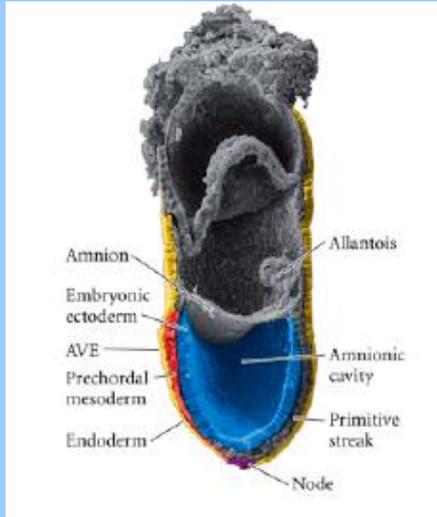
nanos
vasa

Indutores das células germinativas

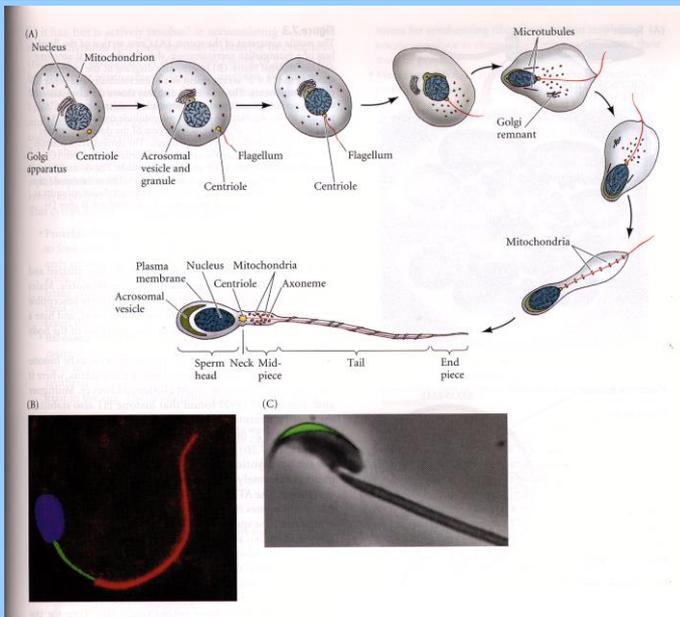
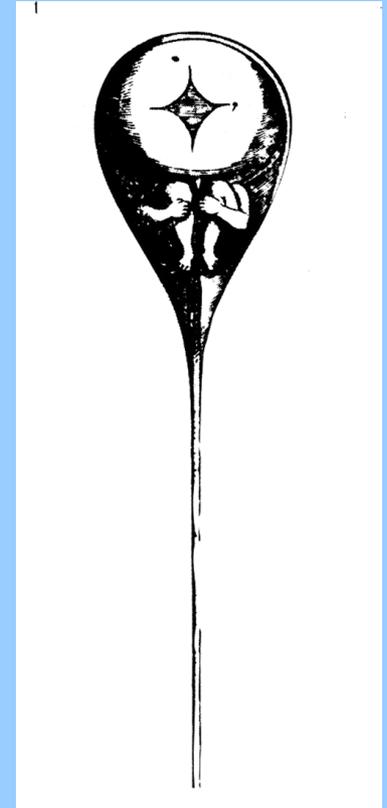
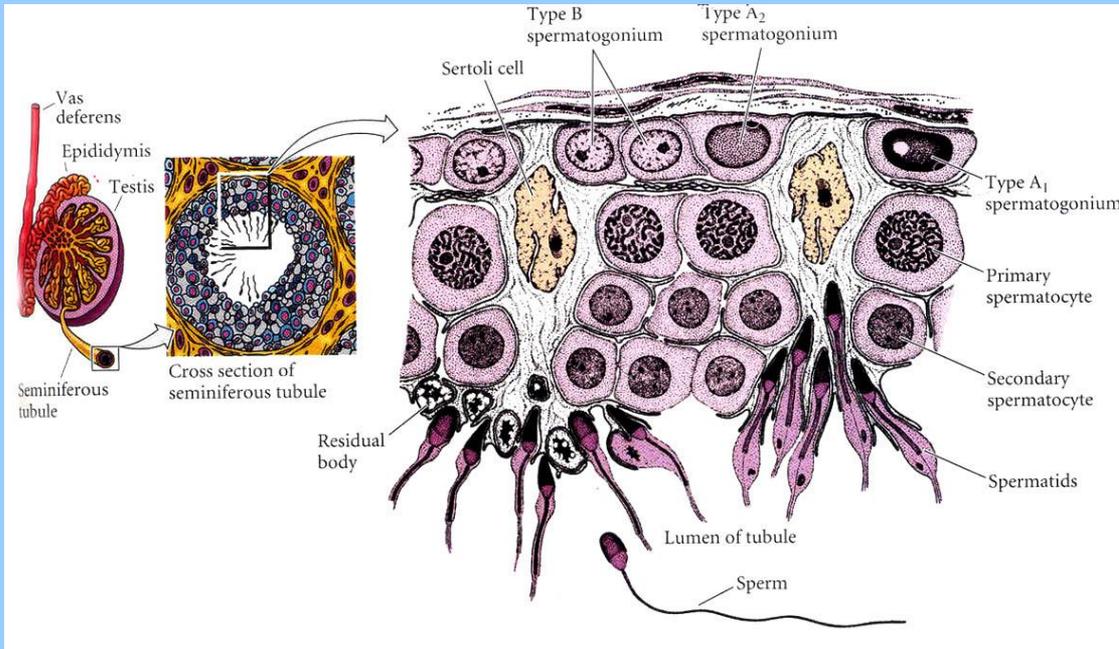


Indutores das células germinativas

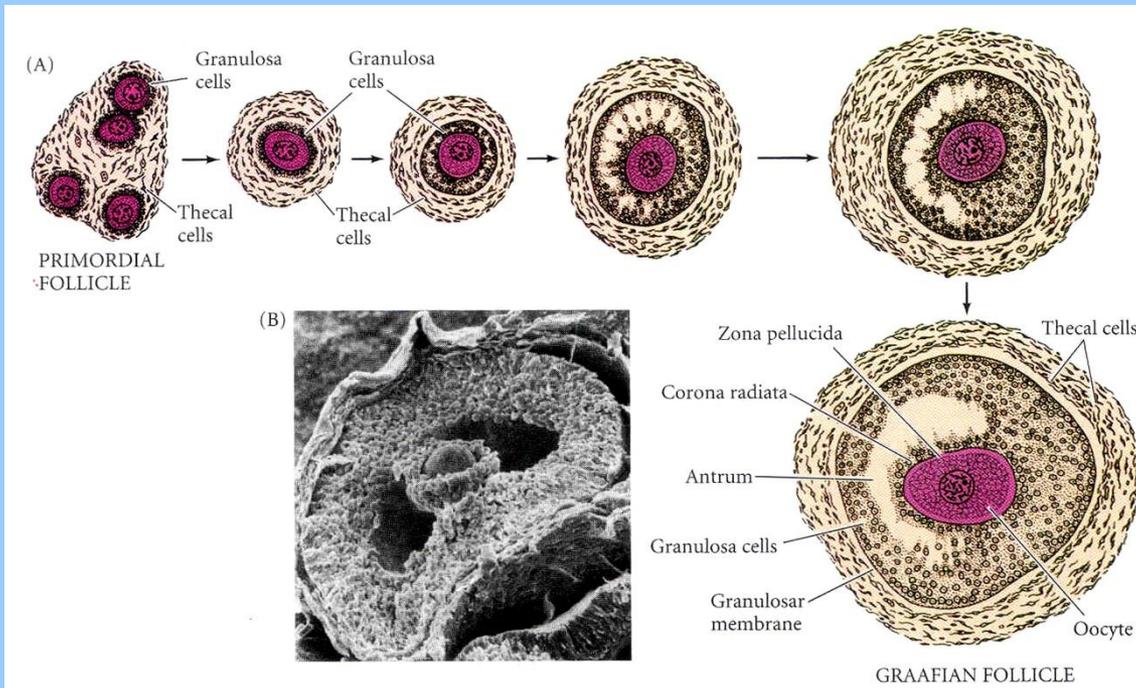
Mamíferos



(Gilbert, Developmental Biology, 7th Edition)



(Gilbert, Developmental Biology, 7th Edition)



(Gilbert, Developmental Biology, 7th Edition)

